CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-88

WASTE DISCHARGE REQUIREMENTS FOR:

STANFORD LINEAR ACCELERATOR CENTER
STANFORD UNIVERSITY
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The Stanford Linear Accelerator Center (SLAC), hereinafter called the discharger, is the current owner of a 480-acre site located two miles west of the Stanford University campus which is bounded by Sand Hill Road to the north and by San Francisquito Creek to the south and east (Attachment 1).

2. From 1967 to 1978, an underground storage tank was used to store waste liquids and solvents from SLAC's paint shop (Attachment 2). In 1983, pressure testing of the tank revealed it to be leaking.

3. The tank was subsequently removed, soil samples taken from the bottom of the excavation and a monitoring well drilled next to the excavation. Laboratory analyses of the soil showed that as many as 17 hazardous substances were found at the site. These materials include xylene, toluene, methyl pentane, acetone, dichloromethane, and polychlorinated biphenyl (PCB) 1254 in the parts per million range. Analysis of the shallow groundwater next to the tank revealed the presence of 18 volatile organic compounds with nine having concentrations in the parts per million range.

4. In late 1984, seven soil borings, three shallow monitoring wells, and one deep well were drilled. From the results of that investigation, it currently appears that the soil contamination is confined to the immediate vicinity of the former tank site. The new monitoring wells did not find contaminants in the groundwater but the results were inconclusive.

5. SLAC is located within the San Francisquito Creek Basin. All surface waters drain into San Francisquito Creek, a tributary of South San Francisco Bay. Six private wells are located within a three mile radius of the site. Three are located 0.7 to 0.8 miles south and southeast of the tank site. These wells are on the south side of San Francisquito Creek and are used for domestic and irrigation supplies on the land leased from Stanford University.

6. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for South San Francisco Bay and contiguous surface and groundwaters.

7. The beneficial uses of South San Francisco Bay and contiguous water bodies are:

   municipal water supply
   domestic water supply
   water contact recreation
   non-contact water recreation
   wildlife habitat
   warm and cold fresh water habitat
   fish migration
   industrial service and process supply
   navigation
   agricultural water supply

8. The beneficial uses of the groundwaters are:

   municipal water supply
   domestic water supply
   industrial service and process supply
   agricultural water supply

9. Based on the Basin Plan and the nondegradation policy of the State Water Resources Control Board (SWRCB) high quality waters should be maintained, unless the Board determines that some water quality degradation will not unreasonably affect beneficial uses and is consistent with maximum benefit to the people of the State. The initial requirements for groundwater pollution cases is to fully characterize the pollution plume's degree and extent.

10. The Board has notified all interested agencies and persons of its intent to prescribe waste discharge requirements for this discharger.

11. The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

12. The permit is exempt from the provisions of the California Environmental Quality Act under section 15304, Title 14, of the California Administrative Code.

IT IS HEREBY ORDERED, that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or affect the beneficial uses of the groundwaters of the State is prohibited.

2. The discharge of wastes or hazardous materials through surface runoff or through subsurface transport which will degrade water quality or affect the beneficial uses of surface waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of the pollution is prohibited.

B. Specifications

1. The local and regional hydrogeologic conditions shall be defined in the areas of and contiguous to the known pollution.

2. The lateral and vertical extent of soil and groundwater pollution shall be defined.

3. The potential for the current contamination to spread to nearby private wells or discharge to surface water shall be evaluated.

4. Additional migration of groundwater pollutants shall be prevented.

C. Provisions

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. In order to comply with Specification B.1, the discharger, shall meet the following compliance time schedule:

Task	Compliance Date
a. Define the hydrogeologic properties and lateral continuity of the various aquifers and aquitards in the study area by conducting appropriate hydrologic tests (e.g. pumping tests and geophysical logging).	November 25, 1985
b. Determine the groundwater gradient within and between each aquifer identified in the study area.	November 25, 1985
c. Determine the recharge and discharge areas in the groundwater system and the seasonal effects on the groundwater flow.	November 25, 1985

3. In order to comply with Specification B.2, the discharger shall meet the following compliance time schedule:

Task	Compliance Date
a. Define the distribution of contaminants in the shallowest hydrogeologic unit found at the waste storage tank site.	November 25, 1985

b.	Determine if contaminants may be entering deeper groundwater-bearing zones and whether they are discharging into the San Francisquito Creek.	November 25, 1985

4. In order to comply with Prohibitions A.1 and A.2, the discharger shall submit a report by December 27, 1985 which will evaluate cleanup alternatives.

5. Documentation of compliance with Specifications B.1 and B.2 and Provisions 3 and 4 above shall include groundwater gradient contour maps, pollution concentration contour maps, cross-sectional geologic maps and geophysical logs. The spacing of the monitoring wells and/or borings shall be sufficiently close to reduce errors in interpretation between data points. This documentation shall be updated with each technical report submitted under this Order, as appropriate.

6. The dischargers shall submit to the Board bimonthly reports on the status of the investigation.

7. All samples shall be analyzed by State-approved laboratories using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

8. The discharger shall permit the Board or its authorized representative in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon premises on which any pollution sources exist, or may potentially exist, or on which any required records are kept;

   b. Access to copy any records required to be kept under terms and conditions of this order.

   c. Inspection of any monitoring equipment or methods required by this order

   d. Sampling of any groundwater or soil which is accessible, or may become accessible as part of any investigation or remedial action program, to the dischargers.

9. The dischargers shall file a report on any material changes in the nature, quantity or transport of polluted groundwater associated with the conditions described in this Order.

10. The dischargers shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

11. The Board will review this Order periodically and may revise the requirements when necessary. This may include further investigation and cleanup if warranted by monitoring results and other considerations.

12. Final cleanup limits shall be established by Board action once compliance with Specifications B.1, B.2, and B.3 are achieved.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on July 17, 1985.

ROGER B. JAMES
Executive Officer